





Budgeting & Forecasting

Course learning objectives

01.

Identify good ways for managers to use a budget

02.

Identify the components of a master budget

03.

Identify the steps that must be taken before preparing a budget

04.

Identify the traits of incremental budgeting

05.

Categorize expenses into the four different types of costs

06.

Identify the advantages of performing multiple regression analysis

07.

Identify causes of favorable and unfavorable variances in profit

08.

Calculate variance percentage change

09.

Identify the goals of a variance dashboard

10.

Know when to use Solver and Goal Seek in Excel

11.

Identify reasons to use dedicated budgeting tools

CFI's mission



We design all our courses with the following goals:

01.

Teach you how finance professionals carry out their jobs in the real world

02.

Give you a solid understanding of key concepts, methods, approaches

03.

Teach you to perform world class financial analysis

04.

Advance your career

CFI Instructors



Meet the global team of CFI instructors



Tim Vipond

CEO & Instructor
Vancouver



Lisa Dorian

Director & Instructor
New York



Justin Sanders

Instructor
London



Ryan Spendelow

Instructor
Hong Kong



Scott Powell

Director & Instructor
Vancouver

01.

Budgeting Within A Strategic Framework

Learning objectives



Explain how budgeting fits into the overall framework of decision-making, planning and control



Describe the purposes and uses of budgets in organizations



Create a process for setting key performance indicators (KPIs) that are both financial and non-financial which drive the budgeting process

Strategic budgeting



Consider the following question:

What is the most significant barrier to improving your budgeting process?

Organizational
attitudes toward
budgeting

Time

Cost

Inflexible IT
systems

Controlled by
another group

There are no
significant
barriers

Barriers to strategy execution



Only 10% of organizations execute their strategy. **The main barriers to strategy execution are:**

Vision barrier

Only 5% of the workforce understands strategy

People barrier

Only 25% of managers have incentives linked to strategy

Management barrier

85% of executive teams spend less than 1 hour / month talking about strategy

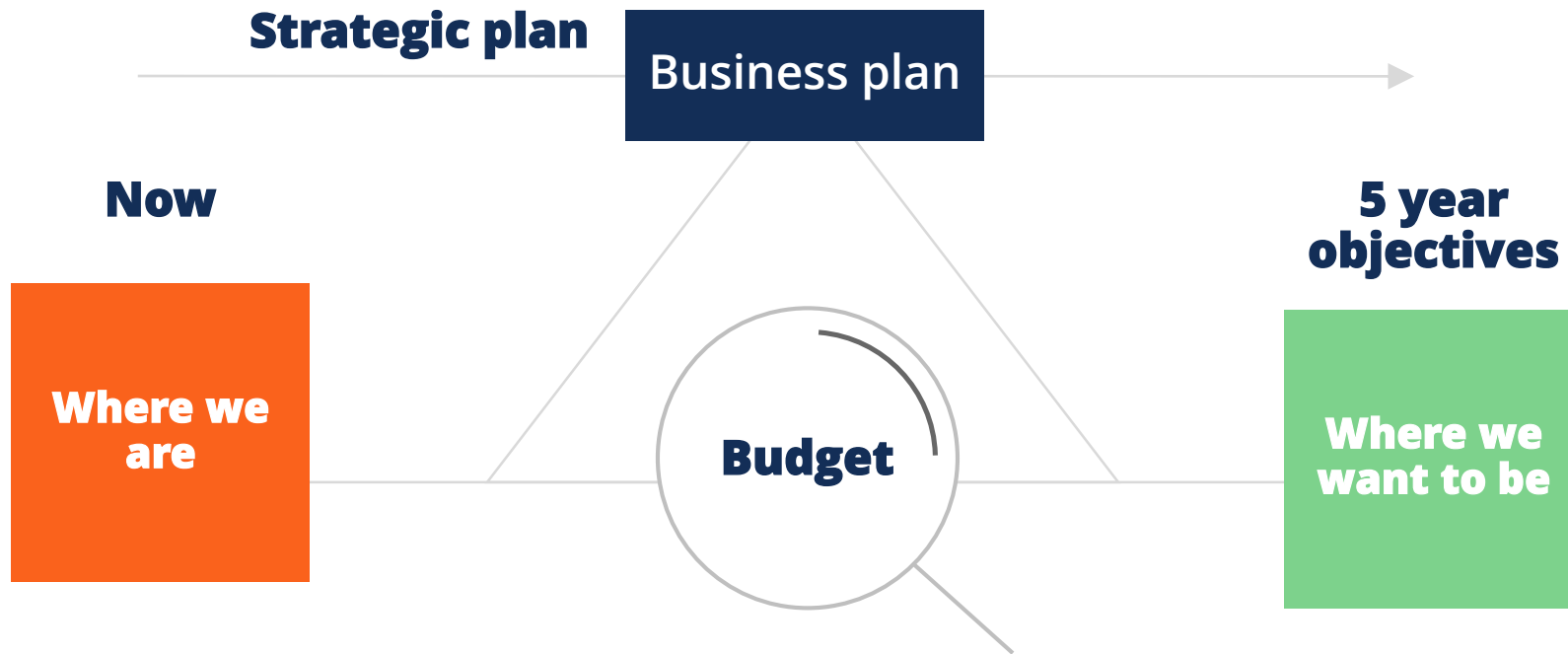
Resource barrier

60% of organizations don't link budgets to strategy

Source: Adapted from material developed by Kaplan and Norton

The importance of budgets

Budgets must link strategies to objectives; it is the tactical implementation of the business plan.



Translating strategy into targets and budgets

Translating high level strategy (mission, vision, goals, etc.) requires you to consider four distinct but related dimensions:



Kaplan and Norton's balanced scorecard



Business performance should be measured from the perspective of strategy implementation rather than relying simply on financial results.

Organizations need a balanced set of financial and non-financial performance measures and targets.

A balanced set of performance measures will ensure that the entire organization participates in strategy implementation and should include:

**Financial
measures**

**Customer
measures**

**Process
measures**

**Learning and
growth measures**

Scorecard perspectives



Example scorecard measures



What are our budgeting goals?

To aid the **planning** of actual operations:

- By getting managers to consider how conditions might change and what steps they would take
- By encouraging managers to consider problems before they arise

To **co-ordinate** the activities of the organization:

- By encouraging managers to examine relationships between their own operation and those of other departments

To **communicate** plans to various managers:

- Everyone in the organization should have a clear understanding of the part they are expected to play in achieving the annual budget
- By ensuring appropriate individuals are made accountable for implementing the budget



What are our budgeting goals?

To **motivate** managers to strive to achieve the budget goals:

- By focusing on participation
- By providing a challenge/target

To **control** activities:

- By comparison of actual with budget (attention directing/management by exception)

To **evaluate** the performance of managers:

- By providing a means of informing managers of how well they are performing in meeting targets they have previously set



What to watch out for

The main criticism of planning and budgeting include:



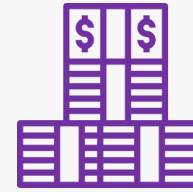
Budgets can become a major barrier to responsiveness



Budgets are rarely strategically focused



Budgets encourage "gaming"



Budgets are based on unsupported assumptions



Budgets may make people feel undervalued

02.

Building a Robust Budgeting Process

Learning objectives



Build a robust budgeting framework



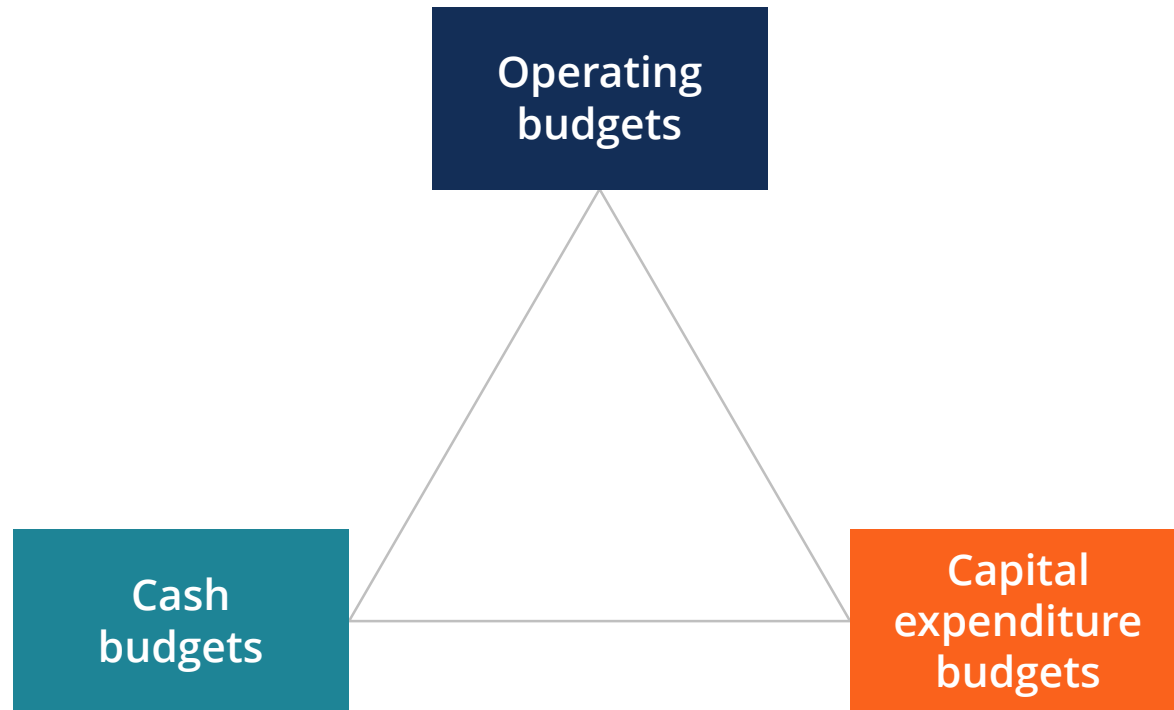
Identify critical roles within the budgeting process



Appreciate the psychological aspects of budgets

Building a robust budgeting framework

A robust budgeting framework is built around a **master budget** consisting of:



When combined, these budgets generate a **budgeted income statement**, a **balance sheet** and a **cash flow statement**.

Types of budgets

OPERATING BUDGETS

Revenues and expenses for the various budget centers within an organization

Budgeted amounts divided into major categories such as revenues, salaries, benefits, and non-salary expenses

Encompasses supporting info such as head counts

CAPITAL BUDGETS

Requests for large assets which create major demands on an entity's cash flow

Buildings, renovations, automobiles, software systems, furniture

Purpose to allocate funds, control risks in decision making, and set priorities

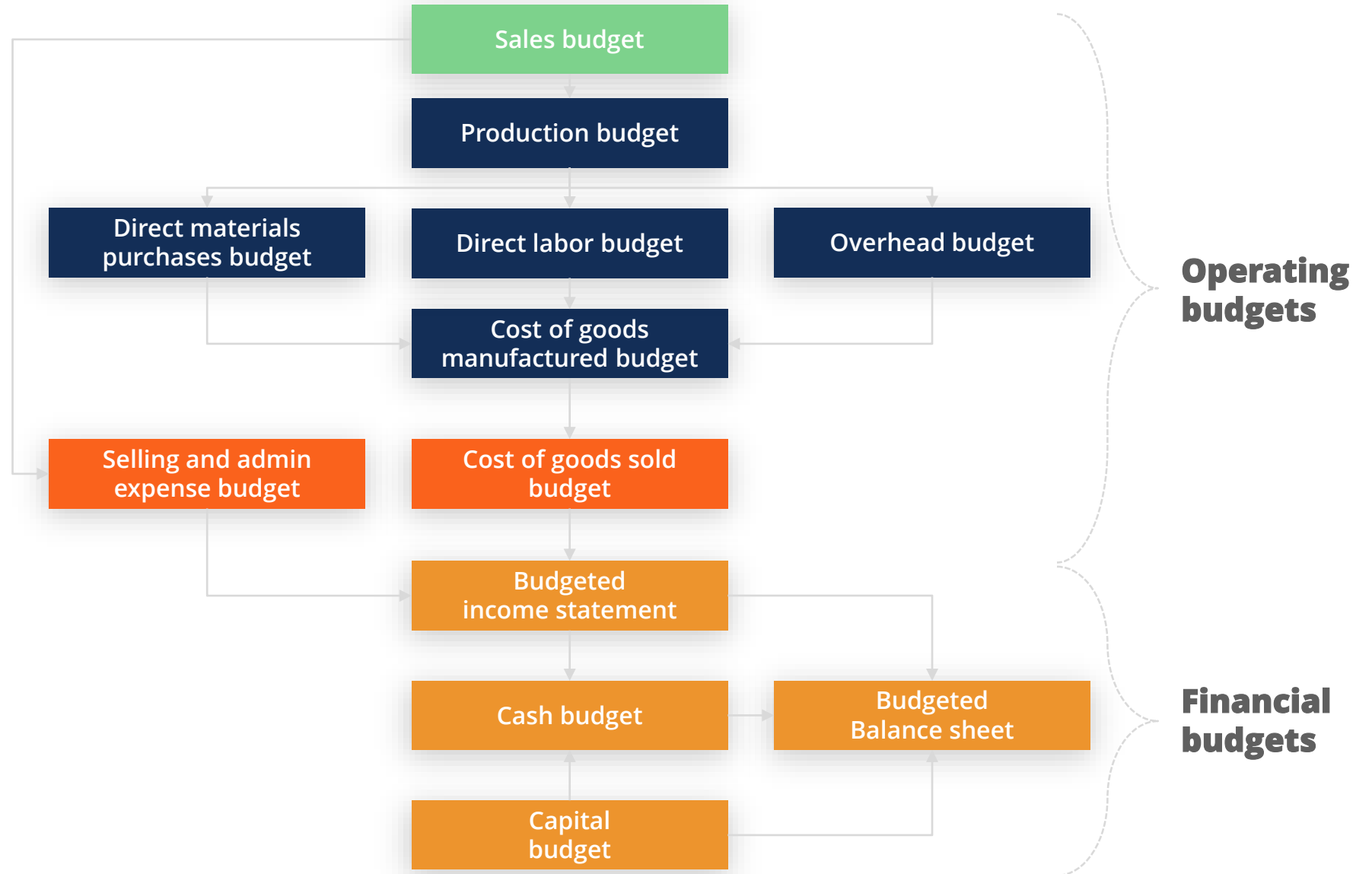
CASH BUDGETS

An estimation of the cash inflows and outflows for a specific period of time

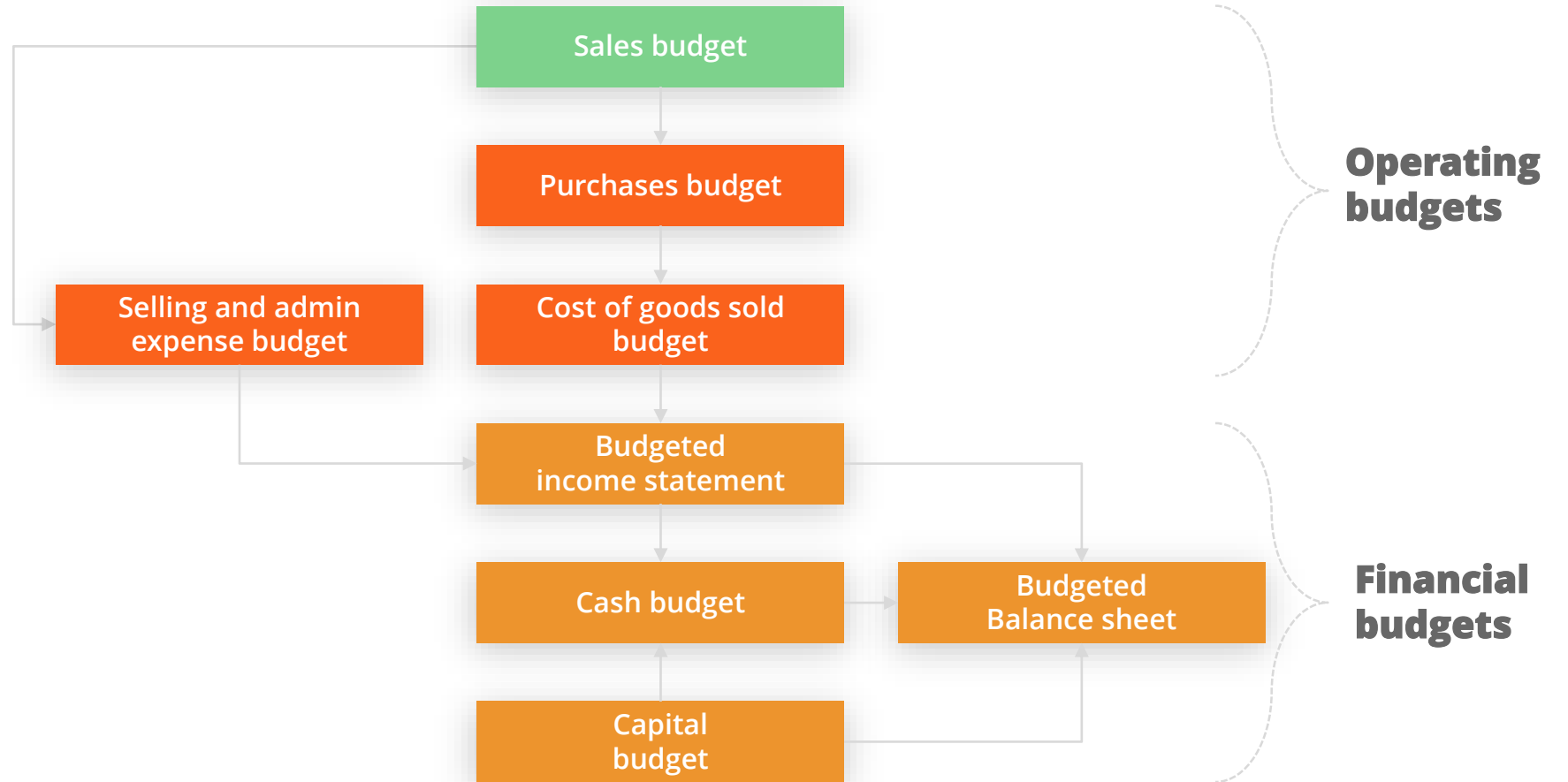
Used to assess whether the entity has sufficient cash to fulfill regular operations

Identifies whether too much cash is being left in unproductive capacities

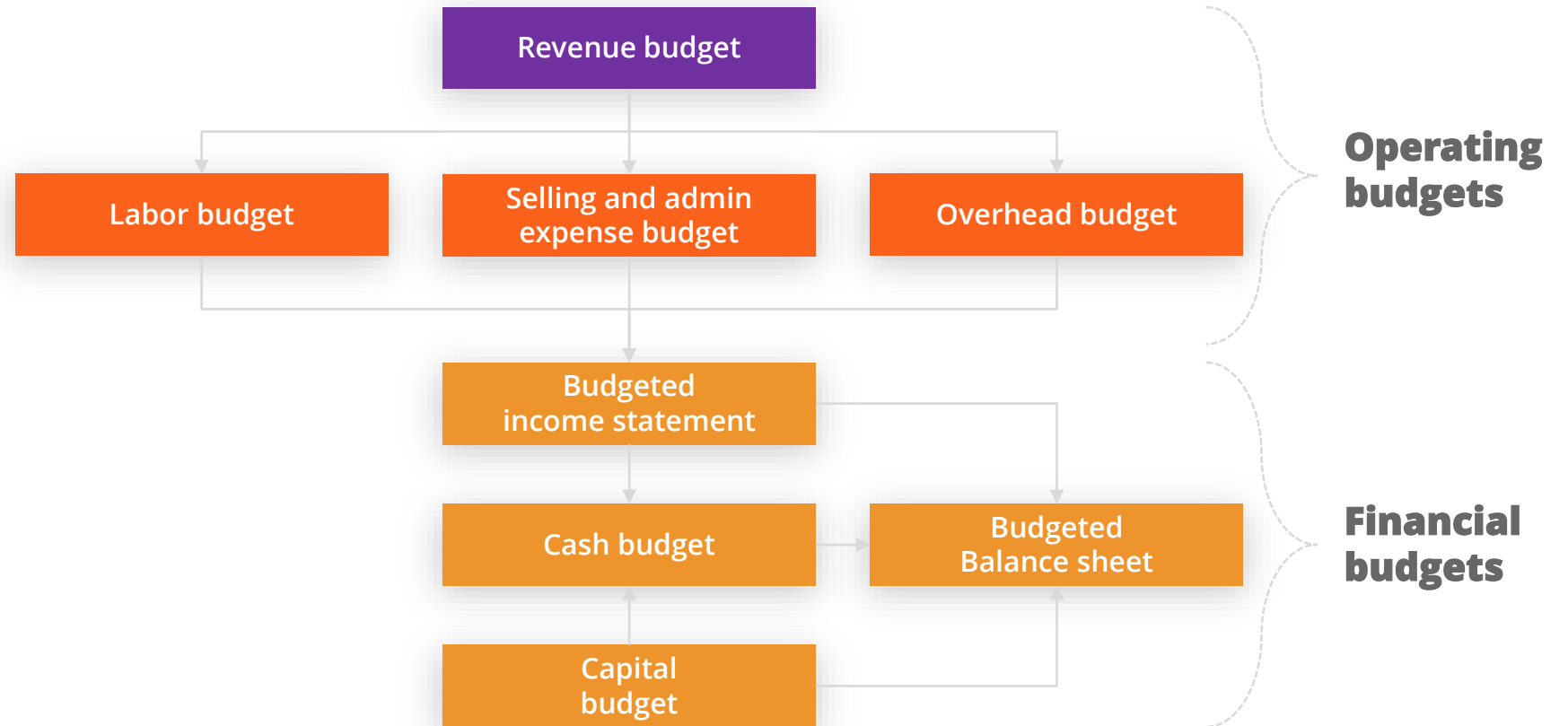
Master budget for a manufacturer



Master budget for a retailer



Master budget for a service provider



Operating budgets – where to start

Before anything else, you first must:



Establish budget centers



**Create a clearly defined
budget organization chart**



Prepare a budget manual



Form a budget committee



A budgeting process

Most larger companies start their budgeting process four to six months before the start of the financial year. Most organization set budgets and undertake variance analysis on a monthly basis.



Budget psychology

Behavioral and social aspects are an integral part of the budgeting process and should not be divorced from the technical side.

Budgets **may motivate or de-motivate** managers depending on:

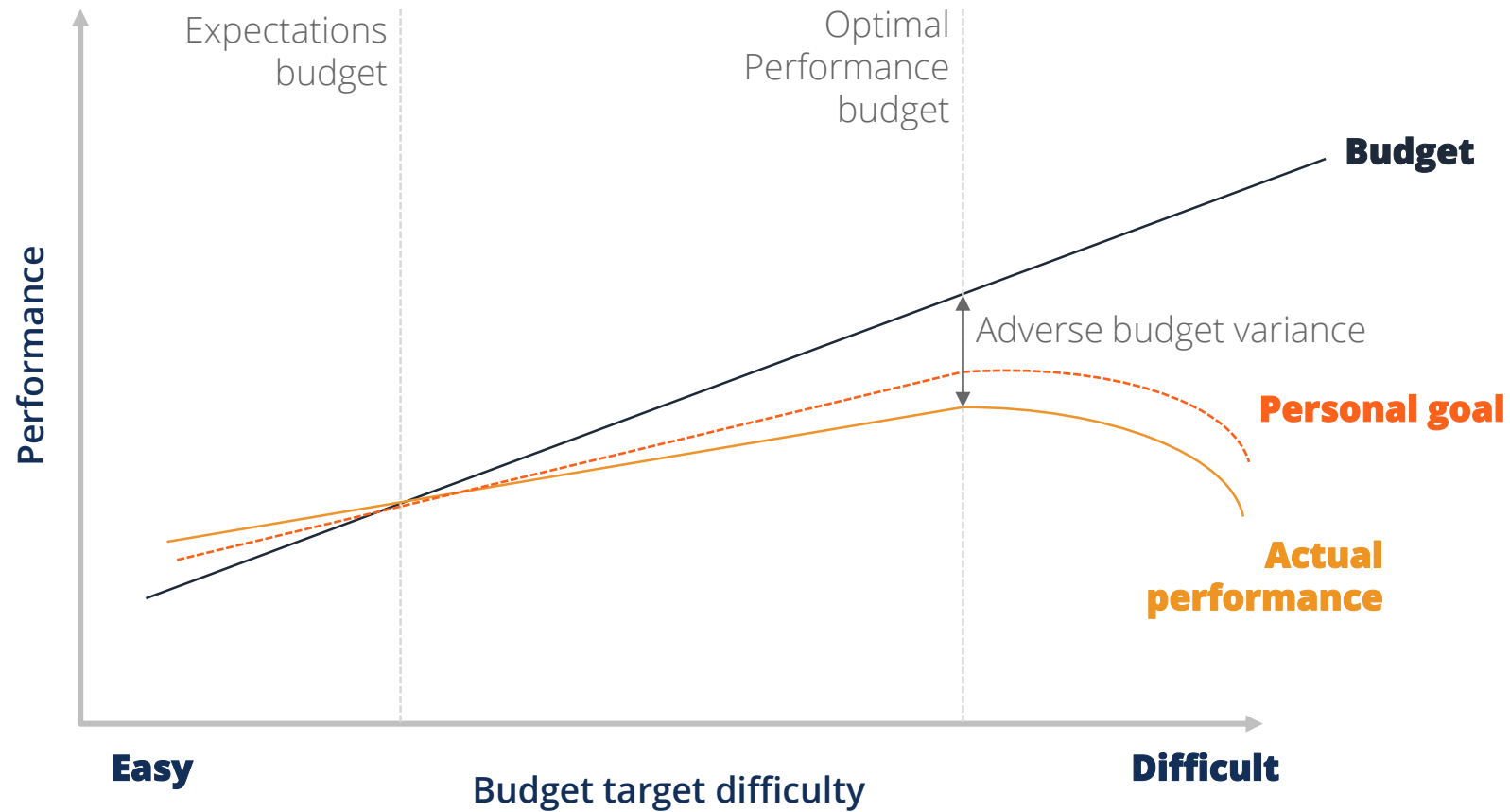
- Where the target is set
- The level of controllability
- The level of involvement in budget setting

Budgets should not be used to **pinpoint blame**

Budgets should be linked to other **performance measures**



The effect of budget target difficulty on performance



Source: Adapted from Otley, 1977

Who should be involved?

Obtaining goal congruence is essentially a behavioral issue. Involvement in the budgeting process is of significant importance in motivating managers.

Imposed budgeting

Top down

Impose budget
targets for
activity and
costs

Negotiated budgeting

Top down

Shared
responsibility
for budget
preparation

Bottom up

Participative budgeting

Recommend
targets for
activity and
costs

Bottom up

One word of warning regarding participation

Studies have shown that participation in the budgeting process was most critical when job difficulty was high and there was an uncertain environment.

Although participation leads to greater budget acceptance and desirable behavioural responses the cost factor may far outweigh the benefits received since some managers may seize the opportunity to bias estimates or inflate the importance of their department in competing for resources.



03.

A Practical Guide To Developing Budgets

Learning objectives



Apply different best practice approaches to budgeting including:

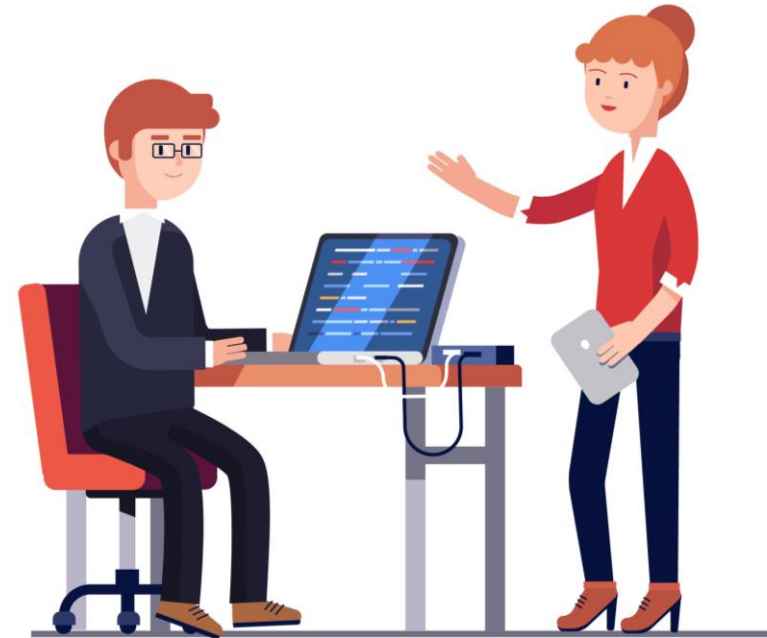
- Incremental budgeting
- Value proposition budgeting
- Output/input budgeting
- Zero based budgeting



Explain the “beyond budgeting” alternative to traditional budgeting

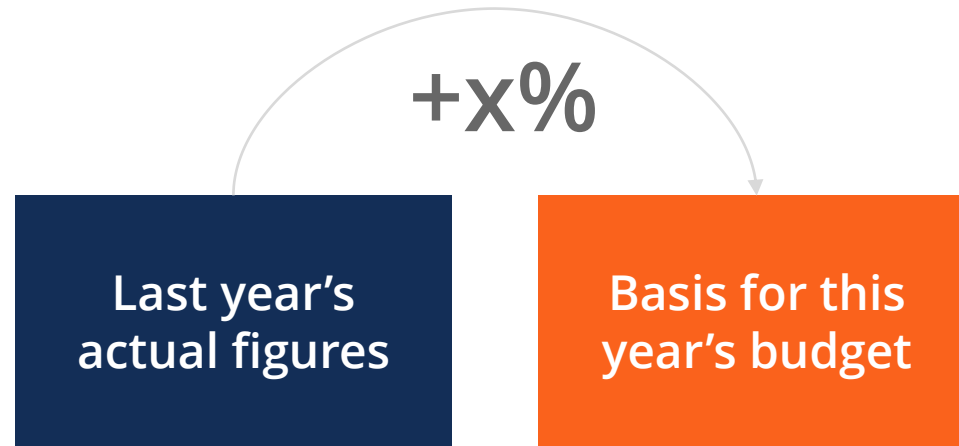
Developing the budget

There are 4 common approaches to developing a budget:



Incremental budgeting

Incremental budgeting is a very simple method that looks at what was spent last year and then adds or subtracts a percentage.



Incremental budgeting

This is still the **most common way** used to produce budgeted figures and it may be appropriate if cost drivers do not change from year to year. However, it is:

Likely to perpetuate **inefficiencies**

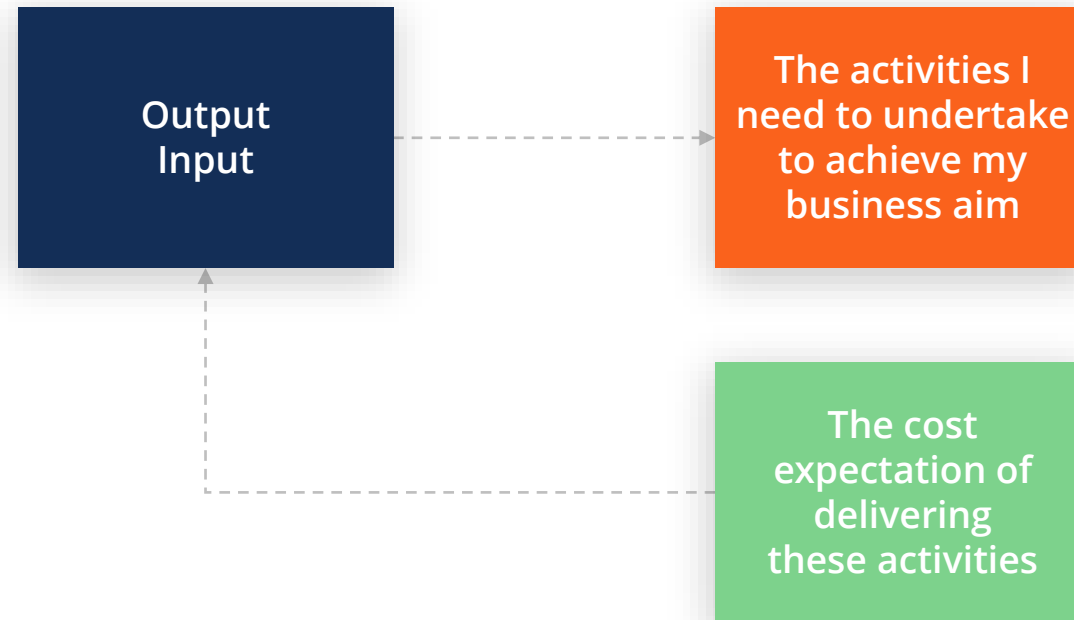
Likely to result in **budgetary slack**

Likely to ignore external drivers of **activity and performance**



Output/input or activity based budgeting

Inputs are determined by outputs, not the other way around. Avoid starting by assessing the resources you have and then trying to assess what is achievable.



Value proposition budgeting

For each budget item/amount, ask:

Why is this **amount included in my budget**? Has a need for this item been demonstrated?

Does the item create **value for customers, staff, or other stakeholders**?

Does the value of **this item outweigh its cost**? If not, is there another reason why this cost is justified?



Zero-based budgeting

Zero-based budgeting starts with the assumption that **all department budgets are zero**. Managers are required to build their budgets from the ground up, justifying every penny they wish to spend.

Bottom-up budgeting can be a highly effective way to “shake things up”. It is most effective when there is an **urgent need for cost containment**. However it is:

Best suited for discretionary costs (**not essential operating costs**)

Extremely **time consuming**

Most effective when **only used occasionally**



Beyond budgeting



“The budget is the bane of corporate America. It never should have existed.” - **Jack Welch**, ex-CEO, General Electric.

“**Beyond Budgeting**” argues that firms today need to be more flexible and responsive to deal with unpredictable change, hyper competition and increasingly fickle customers.

The “**Beyond Budgeting**” movement has developed 12 principles to replace traditional budgeting approaches.

In essence, Beyond Budgeting entails a shift from a performance emphasis on numbers to one based on **people and institutional arrangements**.

Beyond budgeting principles



Values

Bind people to a common cause not a central plan

Governance

Govern through shared values and sound judgement; not detailed rules and regulations

Transparency

Make information open and transparent; don't restrict and control it

Teams

Organize around a seamless network of accountable teams; not centralized functions

Trust

Trust teams to regulate their performance; don't micro-manage them

Accountability

Base accountability on holistic criteria and peer reviews; not on hierarchical relationships

Beyond budgeting principles



Goals

Set ambitious medium term goals; not short-term fixed targets

Rewards

Base rewards on relative performance; not on meeting fixed targets

Planning

Make planning a continuous and inclusive process; not a top-down annual event

Coordination

Coordinate interactions dynamically; not through annual budgets

Resources

Make resources available just-in-time; not just-in-case

Controls

Base controls on fast, frequent feedback; not budget variances

04.

Forecasting Techniques

Learning objectives



Better analyze costs for improved forecasting



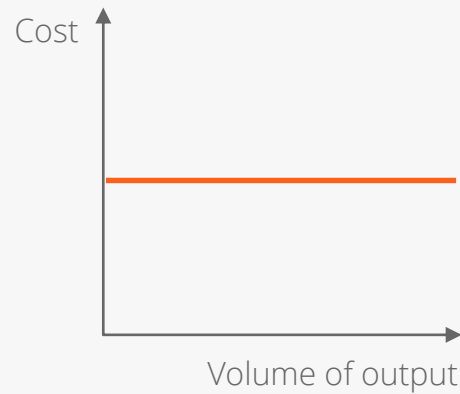
Effectively forecast revenues and expenditures using quantitative techniques



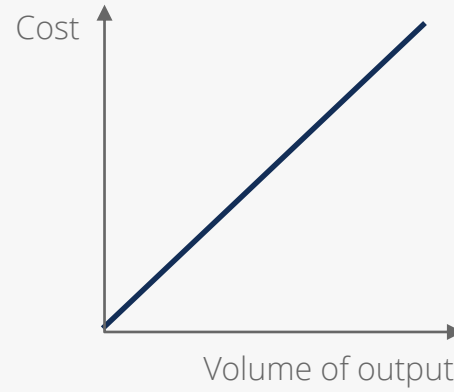
Use tools such as PEST analysis and Porter's 5 forces to aid qualitative forecasting

Types of cost behaviour

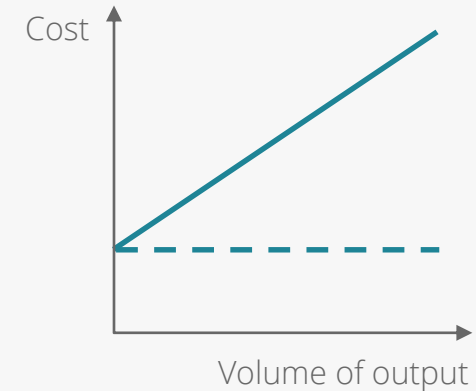
Fixed cost



Variable cost



Semi-variable cost

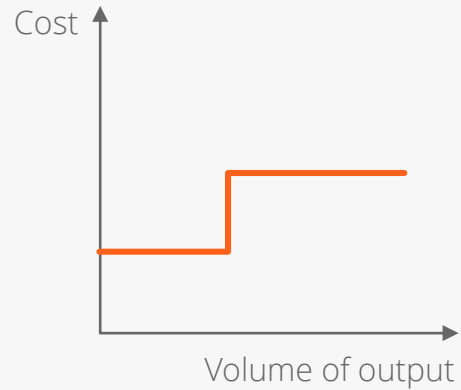


What are the key **fixed costs** in your organization?

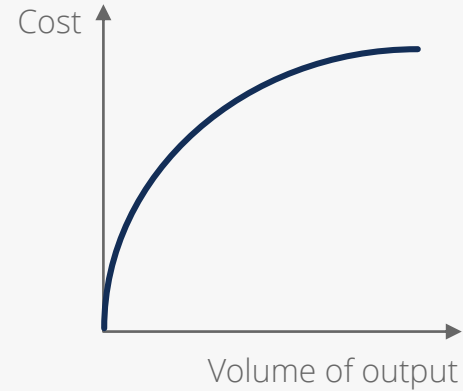
What are the key **variable costs** in your organization?

Types of modified cost behaviour

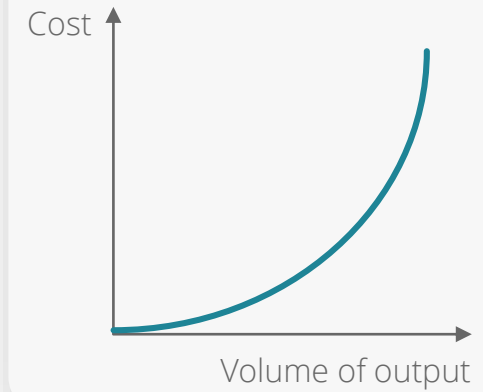
Stepped fixed cost



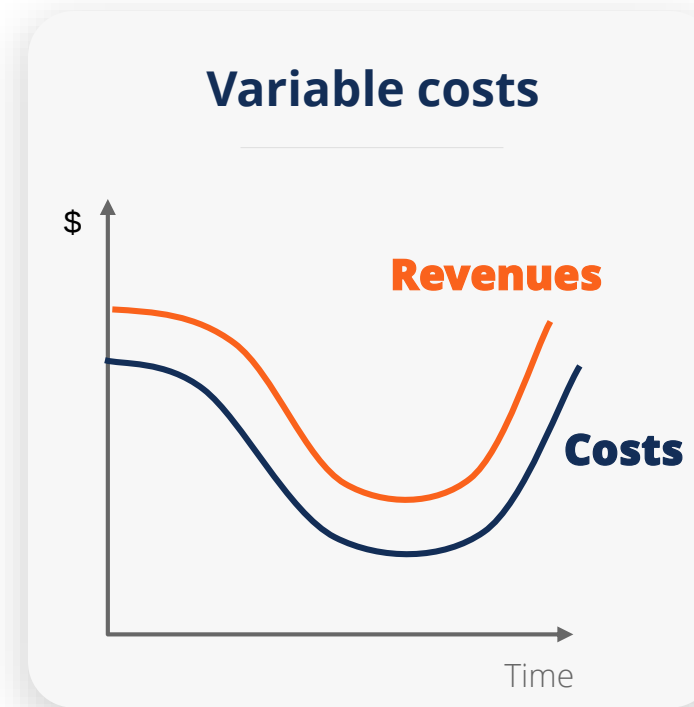
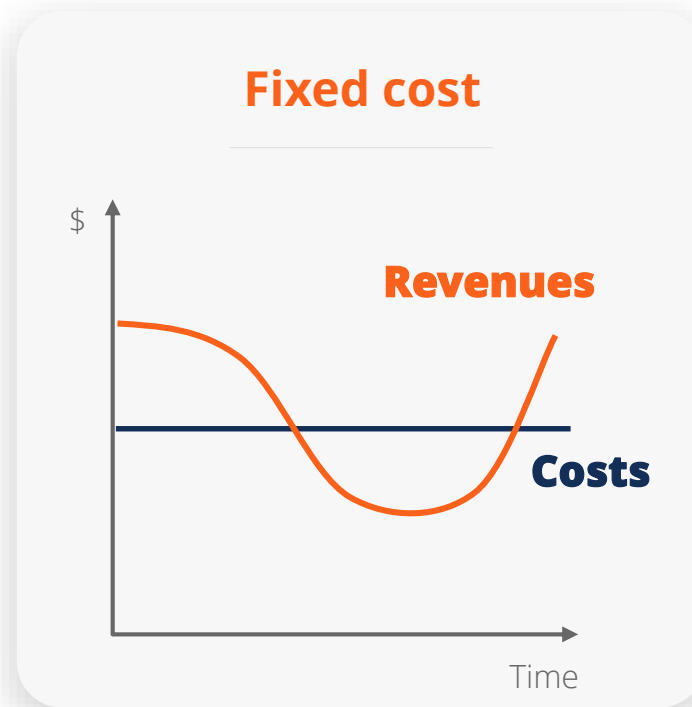
Variable cost with economies of scale



Variable cost with diseconomies of scale



Cost structures and earnings volatility



High fixed cost organizations have volatile earnings: small volume changes have material impact on profits

Organizations with low fixed costs have to generate large increases in revenues for modest increases in profits

Cost structures and flexibility

Analyzing costs into fixed and variable highlights factors affecting the level and volatility of profits:

Example	Service A		Service B	
Sales	\$	%	\$	%
	100,000	100	100,000	100
Variable labour costs (overtime, casual, temps)	40,000	40	60,000	60
Gross contribution	60,000	60	40,000	40
Fixed labour costs (full time staff salaries)	40,000	40	20,000	20
Net profit	20,000	20	20,000	20

Cost structures and flexibility

Example
What is the breakeven point ? $\left(\frac{\text{Fixed costs}}{\text{Contribution margin}} \right)$
What is the margin of safety ? $\left(\frac{\text{Sales} - \text{Breakeven sales}}{\text{Sales}} \times 100\% \right)$
What will the profit be if volumes fall by 50%?
What sales are needed to produce \$50,000 profit?

Service A

Service B

Cost structures and flexibility

Example

What is the **breakeven point**?

$$\left(\frac{\text{Fixed costs}}{\text{Contribution margin}} \right)$$

What is the **margin of safety**?

$$\left(\frac{\text{Sales} - \text{Breakeven sales}}{\text{Sales}} \times 100\% \right)$$

What will the profit be if volumes fall by 50%?

What sales are needed to produce \$50,000 profit?

Service A

$$\frac{40,000}{60\%} = \$66,667$$

$$\frac{33,333}{100,000} = 33\%$$

= \$10,000 loss

$$\frac{90,000}{60\%} = \$150,000$$

Service B

$$\frac{20,000}{40\%} = \$50,000$$

$$\frac{50,000}{100,000} = 50\%$$

= \$0

$$\frac{70,000}{40\%} = \$175,000$$

Cost control matrix



Analyzing costs into fixed and variable highlights factors affecting the level and volatility of profits:

Prioritize costs according to their budget significance and cost control potential. Start your cost analysis with the budget items with the highest cost priority.

Don't overlook small cost management opportunities. These opportunities, if managed across an organization, could be significant.

		Cost control potential		
		High	Medium	Low
Cost significance	High			
	Medium			
	Low			

Quantitative forecasting methods

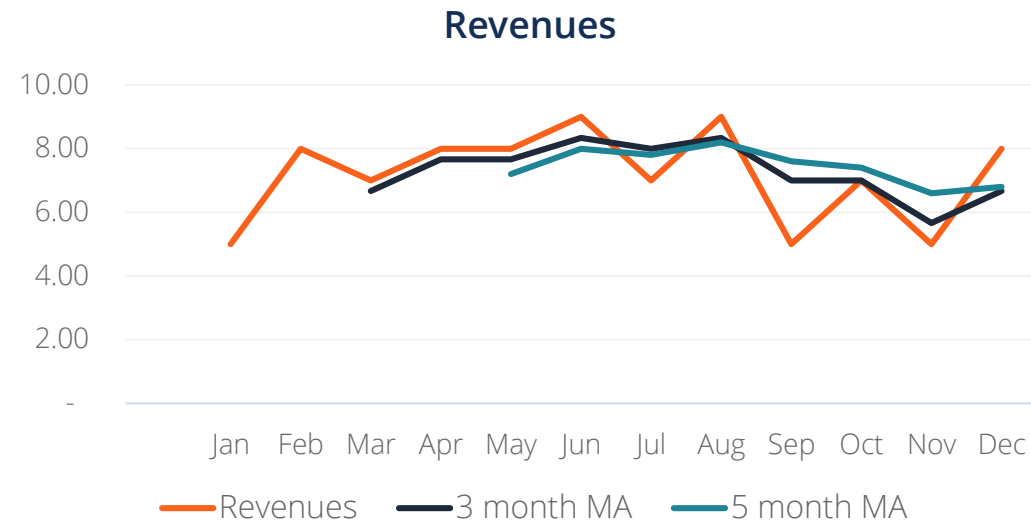
There are a range of widely used quantitative budget forecasting tools including:

Technique	Use	Math involved	Data needed
Moving averages	Repeated forecasts	Minimum level	Historic data
Simple linear regression	Comparing one independent with one dependent variable	Statistical knowledge required	A sample of relevant observations
Multiple linear regression	Compare more than one independent variable with one dependent variable	Statistical knowledge required	A sample of relevant observations

Moving averages

Moving averages is a smoothing technique that looks at the underlying pattern of a set of data to establish an estimate of future values.

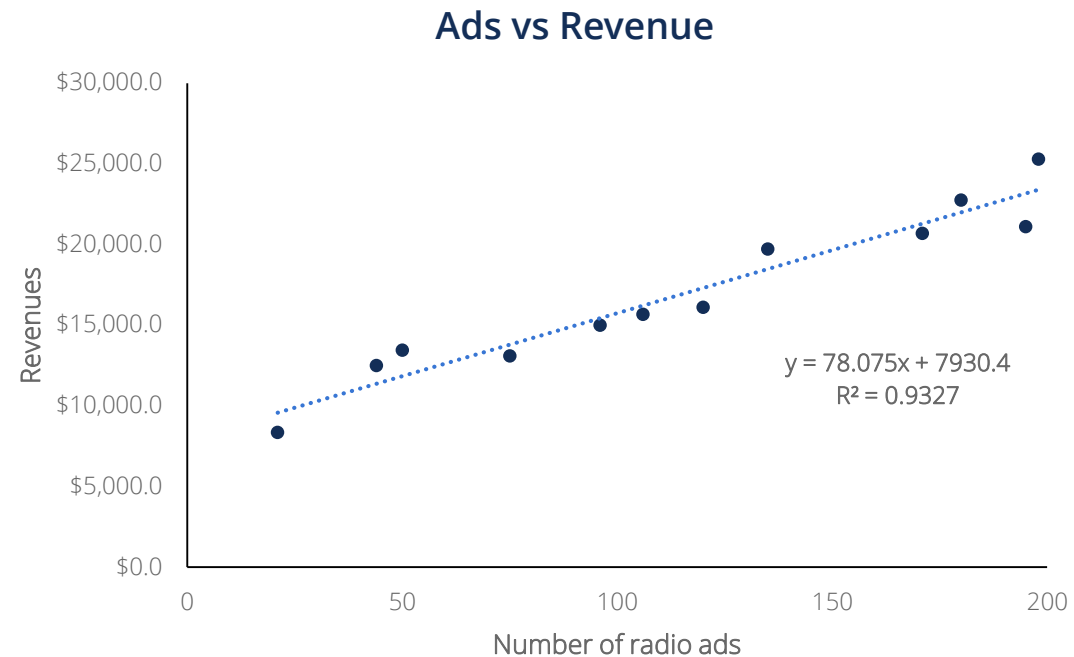
Last 12 months	3 month MA	5 month MA
5		
8		
7	6.7	
8	7.7	
8	7.7	7.2
9	8.3	8.0
7	8.0	7.8
9	8.3	8.2
5	7.0	7.6
7	7.0	7.4
5	5.7	6.6
8	6.7	6.8



Simple linear regression

Regression analysis is a widely used tool for analyzing the relationship between variables for prediction purposes.

Month	Radio ads	Revenues
Jan	21	8,350
Feb	180	22,755
Mar	50	13,455
Apr	195	21,100
May	96	15,000
Jun	44	12,500
Jul	171	20,700
Aug	135	19,722
Sep	120	16,115
Oct	75	13,100
Nov	106	15,670
Dec	198	25,300

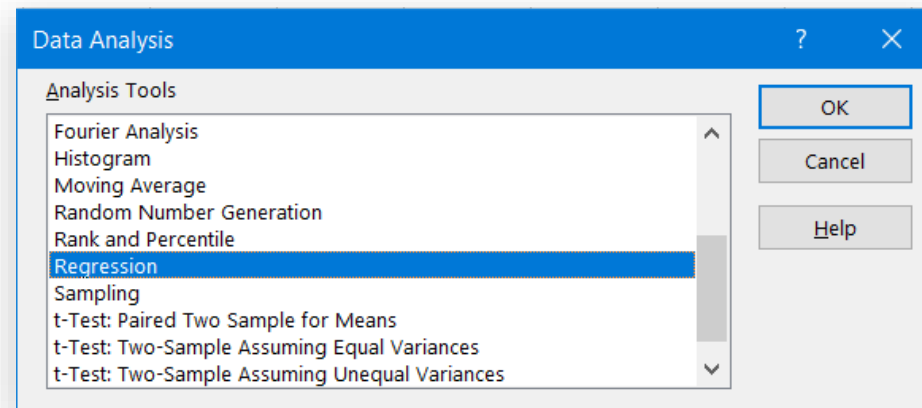


Multiple linear regression

When 2 or more independent variables are required for a prediction the analysis is referred to as multiple linear regression.

Month	Promotion (X1)	Advertising (X2)	Revenue (Y)
Jan	63	123	900
Feb	117	234	1,000
Mar	161	321	1,200
Apr	117	234	1,050
May	116	231	876
Jun	117	432	778
Jul	216	234	1,550
Aug	117	333	777
Sep	167	234	678
Oct	117	333	876
Nov	216	123	1,075
Dec	63	234	925

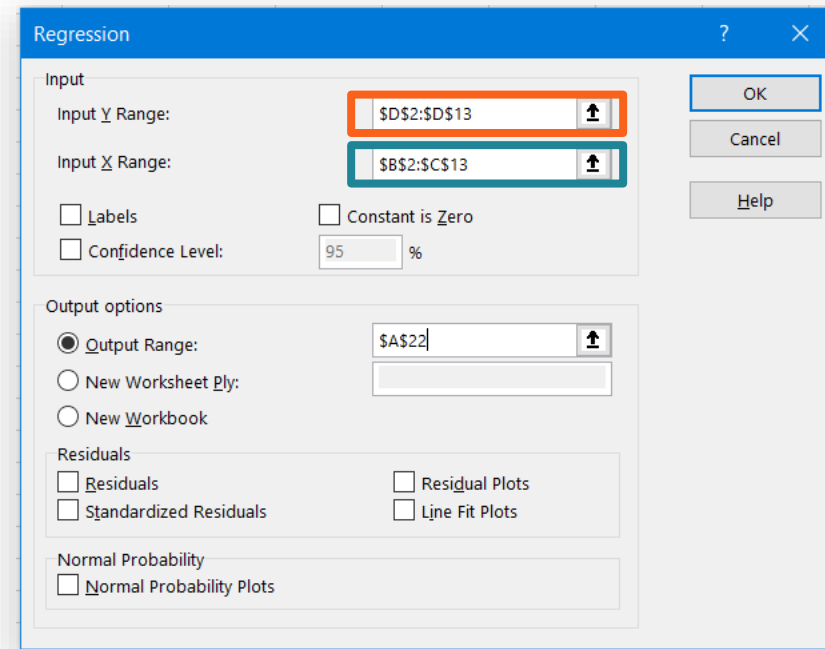
Multiple linear regression is available in Excel via the “Analysis ToolPak” add-in:



Multiple linear regression using Excel

Here the independent (X) variables are “Promotion” and “Advertising” while the dependent (Y) variable is “Revenue”.

	A	B	C	D
1		Promotion	Advertising	Revenue
2	Jan	63	123	900
3	Feb	117	234	1000
4	Mar	161	321	1200
5	Apr	117	234	1050
6	May	116	231	876
7	Jun	117	432	778
8	Jul	216	234	1550
9	Aug	117	333	777
10	Sep	167	234	678
11	Oct	117	333	876
12	Nov	216	123	1075
13	Dec	63	234	925



The image shows the 'Regression' dialog box in Microsoft Excel. The 'Input' section has 'Input Y Range' set to '\$D\$2:\$D\$13' and 'Input X Range' set to '\$B\$2:\$C\$13'. The 'Output options' section has 'Output Range' set to '\$A\$22'. The 'Residuals' section has 'Residuals' and 'Standardized Residuals' checked, while 'Residual Plots' and 'Line Fit Plots' are unchecked. The 'Normal Probability' section has 'Normal Probability Plots' unchecked. The 'Confidence Level' is set to 95%.

Input	Value
Input Y Range	\$D\$2:\$D\$13
Input X Range	\$B\$2:\$C\$13
Labels	☐
Constant is Zero	☐
Confidence Level	95 %
Output Range	\$A\$22
New Worksheet Ply	☐
New Workbook	☐
Residuals	☒
Standardized Residuals	☒
Residual Plots	☐
Line Fit Plots	☐
Normal Probability Plots	☐

Multiple linear regression results using Excel

Here are the summary outputs and how to use them...

SUMMARY OUTPUT	
	<i>Coefficients</i>
Intercept	763.1031959
X Variable 1	2.461572486
X Variable 2	-0.449691418

If we expect:

Forecast "Promotion" to be 125 and
Forecast "Advertising" to be 250...

Note: X Variable 1 is "Promotion"
Note: X Variable 2 is "Advertising"

$$\text{Revenues} = 763.10 + (2.46 \times 125) + (-0.45 \times 250) = 958.10$$

Qualitative forecasting tools

PEST is a useful framework for building expectations about the future and its impact on the budget:



Political forecasting
and trends



Social forecasting
and trends



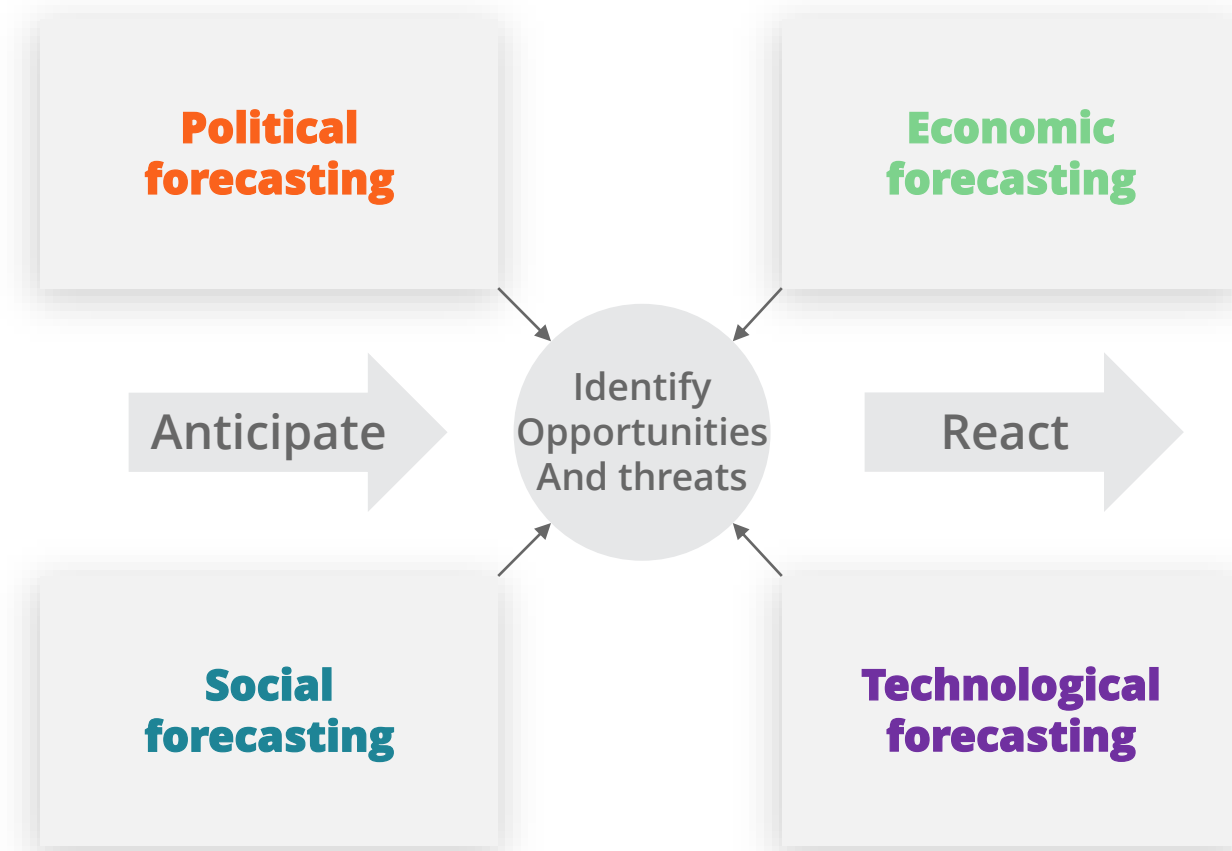
Economic forecasting
and trends



Technological forecasting
and trends



PEST analysis overview



PEST analysis checklist



Political forecasting

- Legislation
- Taxation
- Regulations
- Gov't/business relations
- New competition

Economic forecasting

- Economic cycle
- Interest rates
- Consumer spending
- Government spending
- Business investment
- Exchange rates

Social forecasting

- Demographics
- Lifestyles
- Attitudes
- Needs and desires

Technological forecasting

- Leading edge developments
- Own R&D
- Competitors' R&D

Budgeting using Porter's 5 forces

Porter's 5 forces is a powerful tool for assessing industry dynamics and how industry dynamics may impact budgets. Michael Porter identified FIVE forces driving industry competition:



05.

Tracking Budget Performance With Variance Analysis

Learning objectives



Outline how variances are used to monitor and control a business



Calculate variances and interpret results



Build a variance dashboard report

What is variance analysis all about?

Variance



The difference between budgeted/expected cost and actual cost; and similarly for revenue

Variance Analysis



The process of examining in detail each variance between actual and budgeted/expected costs to determine the reasons why budgeted results were not met (material costs too high, sales prices too low, etc.)



What is variance analysis all about?



Calculating Variances

Variances
Sales Volume
Sales Value
Variable Costs
Fixed Costs
Profit

Budget
100
\$1000
(500)
(200)
300

Who's to blame – breaking down variances

Calculating Variances

Variances
Sales Volume
Sales Value
Variable Costs
Fixed Costs
Profit

Budget	Actual
100	90
\$1000	\$990
(500)	(495)
(200)	(210)
300	285

Variance = (15)

Sales volume variance

Flexing the budget – sales volume variance

Variances
Sales Volume
Sales Value
Variable Costs
Fixed Costs
Profit

Original Budget	Revised Budget
100	90
\$1000	\$900
(500)	(450)
(200)	(200)
300	250

Actual	Variances
90	
\$990	90
(495)	(45)
(210)	(10)
285	35

Variance = (50)

Flexing the budget – sales prices variance

Variances	Original Budget	Revised Budget	Actual	Variances
Sales Volume	100	90	90	
Sales Value	\$1000	\$900	\$990	90
Variable Costs	(500)	(450)	(495)	(45)
Fixed Costs	(200)	(200)	(210)	(10)
Profit	300	250	285	35

Variance = 90

Variable cost variance

Flexing the budget – variable cost variance

Variances
Sales Volume
Sales Value
Variable Costs
Fixed Costs
Profit

Original Budget	Revised Budget
100	90
\$1000	\$900
(500)	(450)
(200)	(200)
300	250

Actual	Variances
90	
\$990	90
(495)	(45)
(210)	(10)
285	35

Variance = (45)

Variable cost variance

Original variable cost budget

2.5m of material for each sales unit at a price of \$2/m
 $100\text{units} \times 2.5\text{m} \times \$2 = \$500$

Actual Result

2.0m of material for each sales unit at a price of \$2.75/m
 $90\text{units} \times 2.0\text{m} \times \$2.75 = \$495$

Compare this result with the **flexed budget**
 $90\text{units} \times 2.5\text{m} \times \$2 = \$450$

What caused the (\$45) or U45 variance?



Variable cost variance

$$\text{Total variance} = (135) + 90 = (45)$$

Price

We expected to pay \$2/m. We did pay \$2.75
 $180\text{m purchased} \times (2.75 - 2.00) = (135)$

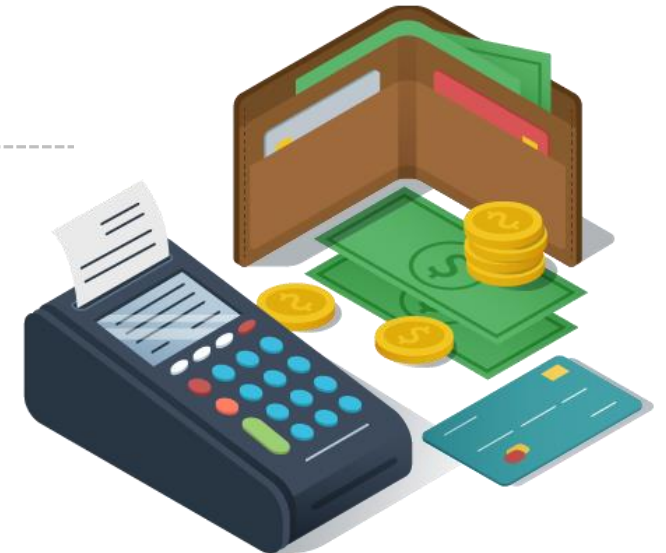
Materials price variance (\$135) or U135

Usage

We expected to use 225m to make 90 units
and actually used 180m

At budgeted price (\$2/m) we saved
 $2.0 \times (225 - 180) = 90$

Materials usage variance \$90 or F90



Fixed cost variance

Flexing the budget – fixed cost variance

Variances
Sales Volume
Sales Value
Variable Costs
Fixed Costs
Profit

Original Budget	Revised Budget
100	90
\$1000	\$900
(500)	(450)
(200)	(200)
300	250

Actual	Variances
90	
\$990	90
(495)	(45)
(210)	(10)
285	35

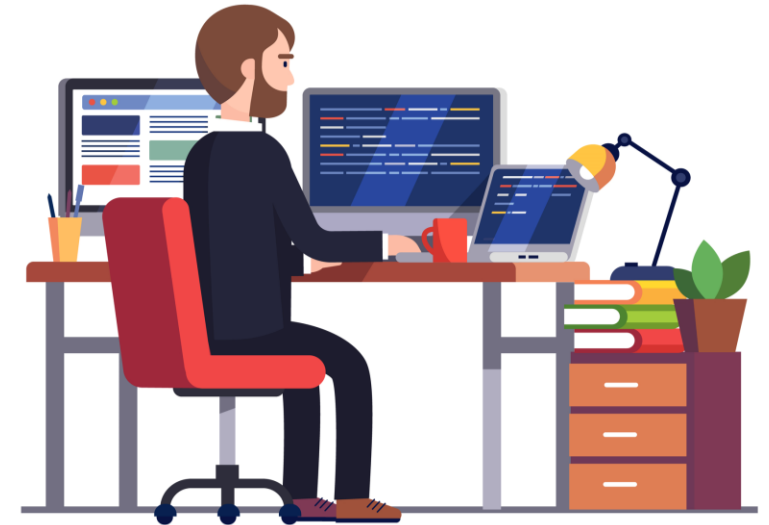
Variance = (10)

Summarizing variances

Variances	
Sales volume	(50)
Sales price	90
Materials price	(135)
Materials usage	90
Fixed costs	<u>(10)</u>
Sum of variances	<u><u>(15)</u></u>



The sum of the variances equals the difference between the actual profit of \$285 and the budget of \$300.



Investigating a variance – labour cost

Imagine you work at ACME Ltd. and the actual labour costs this month to produce 7,000 widgets are \$84,000 over budget. Without breaking down this variance into its core drivers, it is virtually impossible to get answers to the following questions:

What are the root causes?

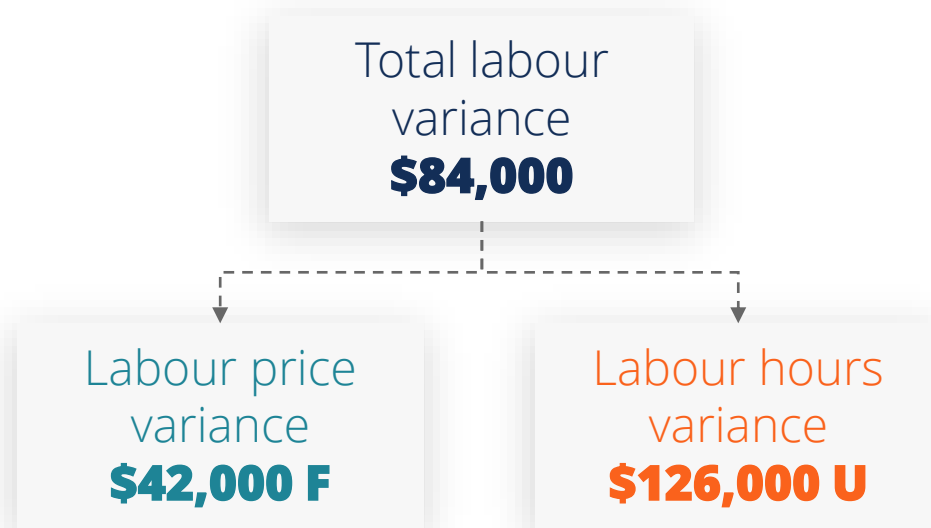
Who is accountable?

What action(s) if any can be taken?

Breaking down variances unlocks the root causes of organizational performance and enables appropriate correction action to be taken.



Investigating a variance – macro to micro



What could be some of the possible causes of the:

Favourable labour price variance?

Unfavourable labour hours variance?



Investigating a variance – root causes



Labour price variance

- 01.** Use of junior versus senior workers
- 02.** Use of workers commanding lower hourly rates
- 03.** Use of unskilled workers paid lower rates



Labour quantity variance

- 01.** Poor supervision
- 02.** Improperly trained workers
- 03.** Machine breakdowns
- 04.** Use of unskilled workers
- 05.** Use of more workers

Presenting variance analysis to management

Leading edge organizations are increasingly developing “information dashboards” that summarize key messages coming out of variance analysis with the goal of:

Conveying a lot of information as quickly as possible

Presenting several different types of information all one screen

Using graphs in place of tables where appropriate



13 common dashboard mistakes

01.

Exceeding the boundaries of a single screen

02.

Supplying inadequate context for the data

03.

Displaying excessive detail or precision

04.

Choosing a deficient measure

05.

Choosing inappropriate display media

06.

Introducing meaningless variety

07.

Using poorly designed display media

08.

Encoding quantitative data inaccurately

09.

Arranging data poorly

10.

Highlighting important data ineffectively or not at all

11.

Cluttering the display with useless decoration

12.

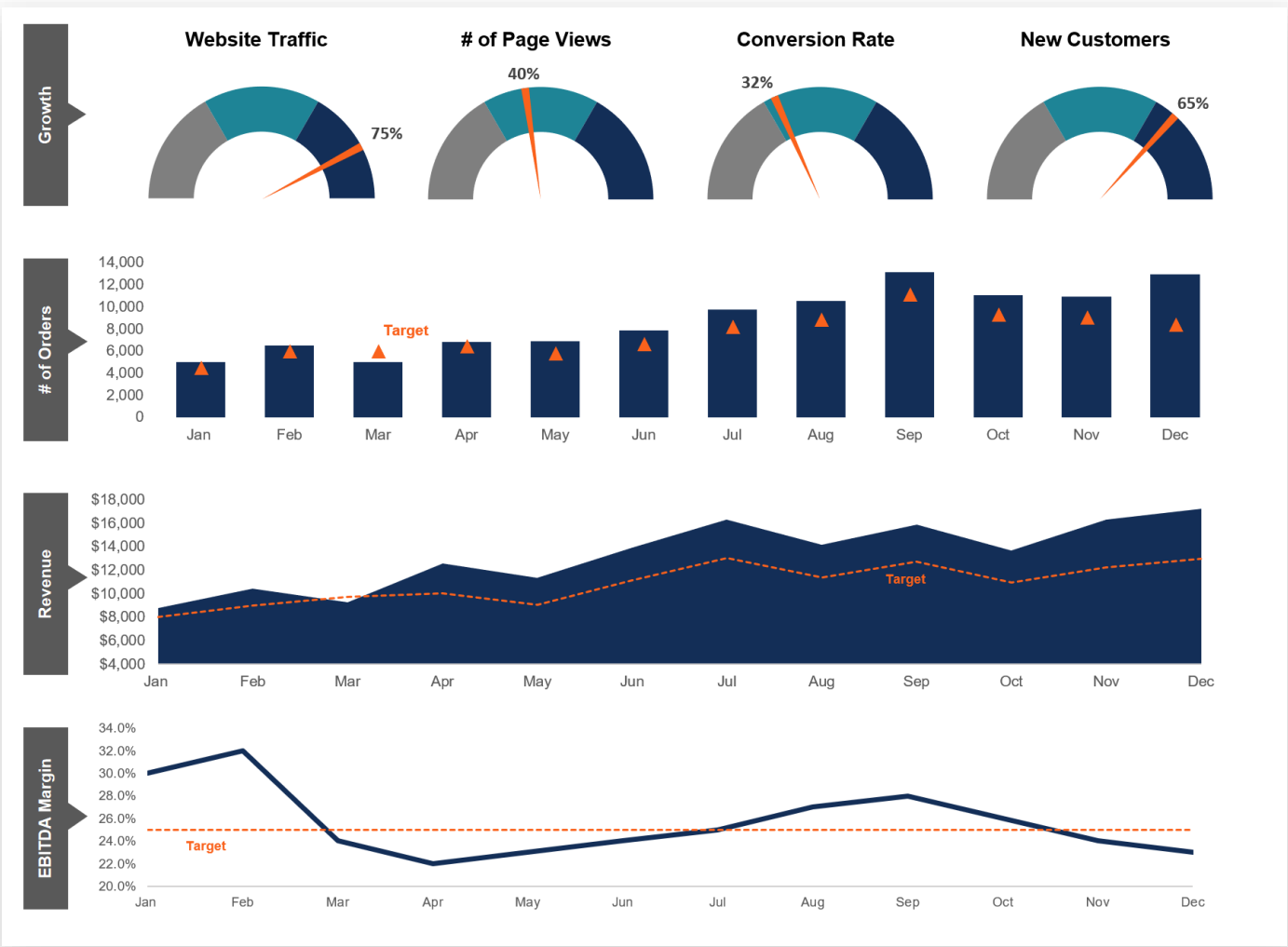
Misusing or overusing colour

13.

Designing an unattractive visual display

*Source: Jonathan Teller, "Gorgeous Dashboards",
Finance & Management, June 2010 ICAEW*

Sample budget dashboard



Source: CFI's Dashboards & Data Visualization Course

06.

Applied Budgeting Tools And Techniques

Learning objectives



Apply useful Excel functions and tools when budgeting



Outline the pros and cons of linking workbooks in building a budgeting process



Identify when to use dedicated budgeting tools

Reporting results using pivot tables

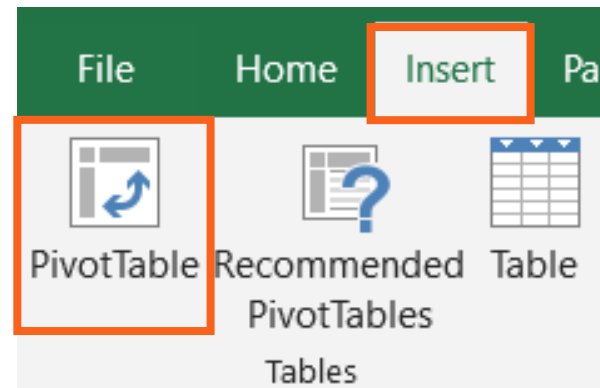
Pivot tables are tools for dynamically summarizing, analyzing and reporting data. They allow us to rotate (pivot) a summary data table so it can be viewed from different angles.

Sum of Shipping Cost Column Label									
Row Labels	2018-01-01	2018-01-02	2018-01-03	2018-01-04	2018-01-05	2018-01-06	2018-01-07	Grand Total	
Hat	-2	-2	-10	-2	-8	-2	-10	-36	
Pants	-10	-10	-5	-5	-25	-20	-5	-80	
Shorts	-6	-9	-6	-6	-21	-9	-6	-63	
T-shirt	-15	-5	-10	-15	-15	-10	-10	-80	
Grand Total	-33	-26	-31	-28	-69	-41	-31	-259	

Row Labels	Sum of Revenue
Hat	450
Pants	1,200
Shorts	735
T-shirt	720
Grand Total	3,105

Creating a pivot table

- Ensure data is in columns
- Row 1 should contain the field name
- Data can be numerical values, text or formulas
- Excel 2007 & later versions create a pivot table by choosing **Insert / Tables / PivotTable**
- Excel 2003 & prior versions create a pivot table by choosing **Data / PivotTables and PivotChart Report**



Excel 2007 & later versions

Are you building a budgeting house of cards?



Are you building a budgeting house of cards made up of numerous Excel spreadsheets?

If so, it may be time to move to a dedicated budgeting tool that:

Provides an **automatic process of data accumulation**

Provides for a **distributed process**

Provides **two way integration with the general ledger**

Provides **drill down and roll up capabilities**

Produces **user-friendly and flexible budget reporting**

07.

Conclusion

Course learning objectives

01.

Learn how budgeting fits within a business' strategic framework

02.

Understand how to design a robust budgeting process

03.

Understand practical ways of building a budget

04.

Learn how to use various forecasting techniques

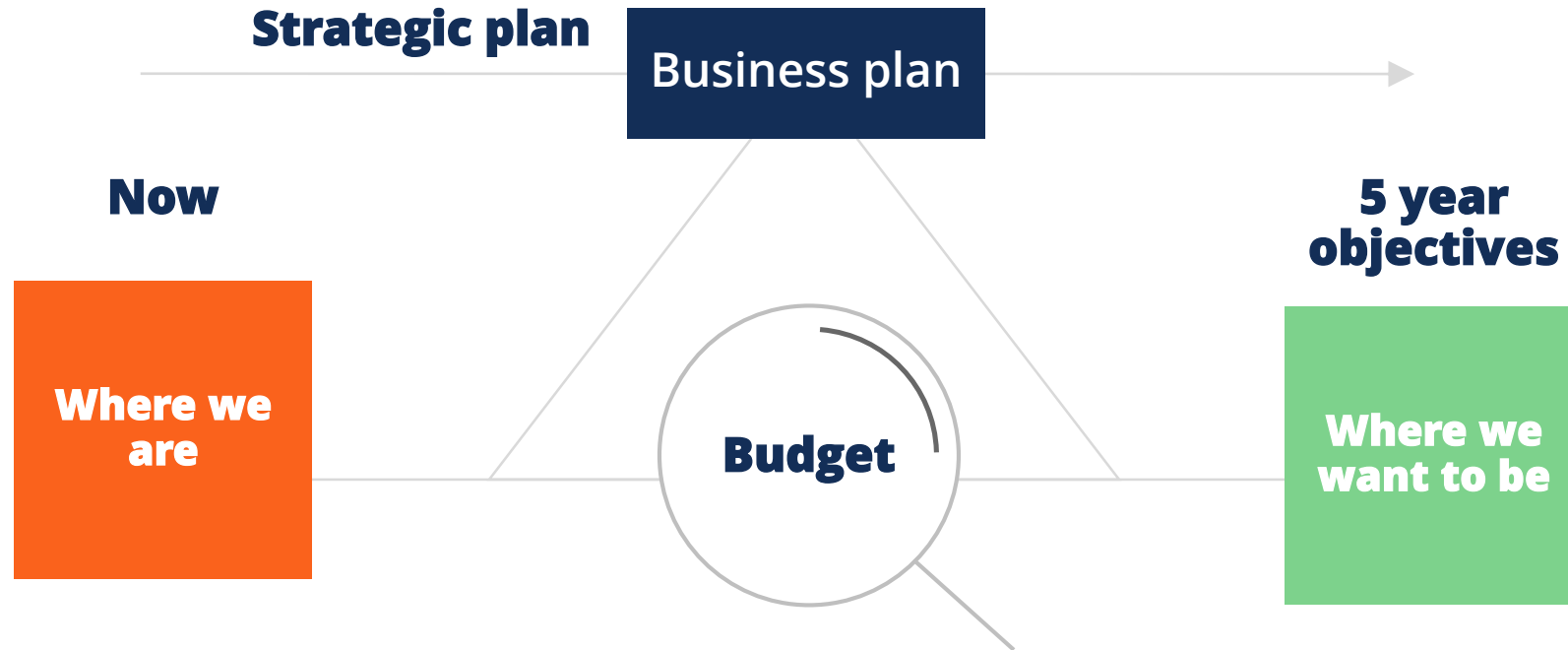
05.

Understand how to track a budget's performance with variance analysis

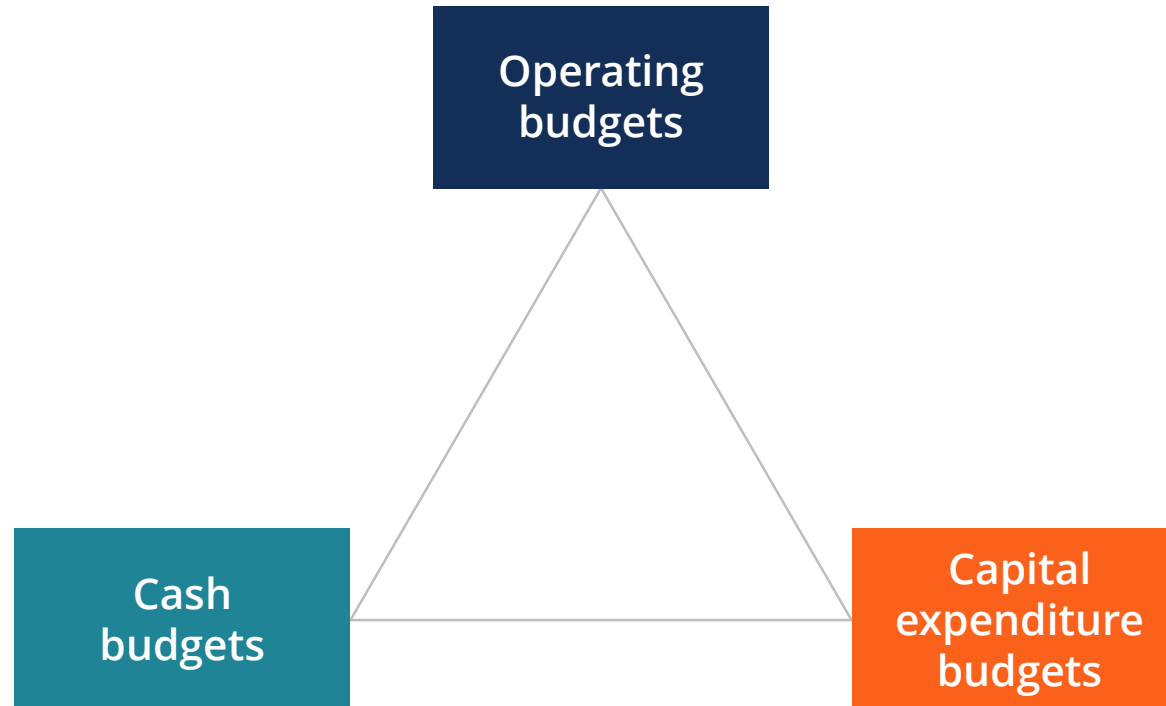
06.

Learn about practical applications of budgeting tools and techniques

1. Learn how budgeting fits within a business' strategic framework



2. Understand how to design a robust budgeting process



3. Understand practical ways of building a budget

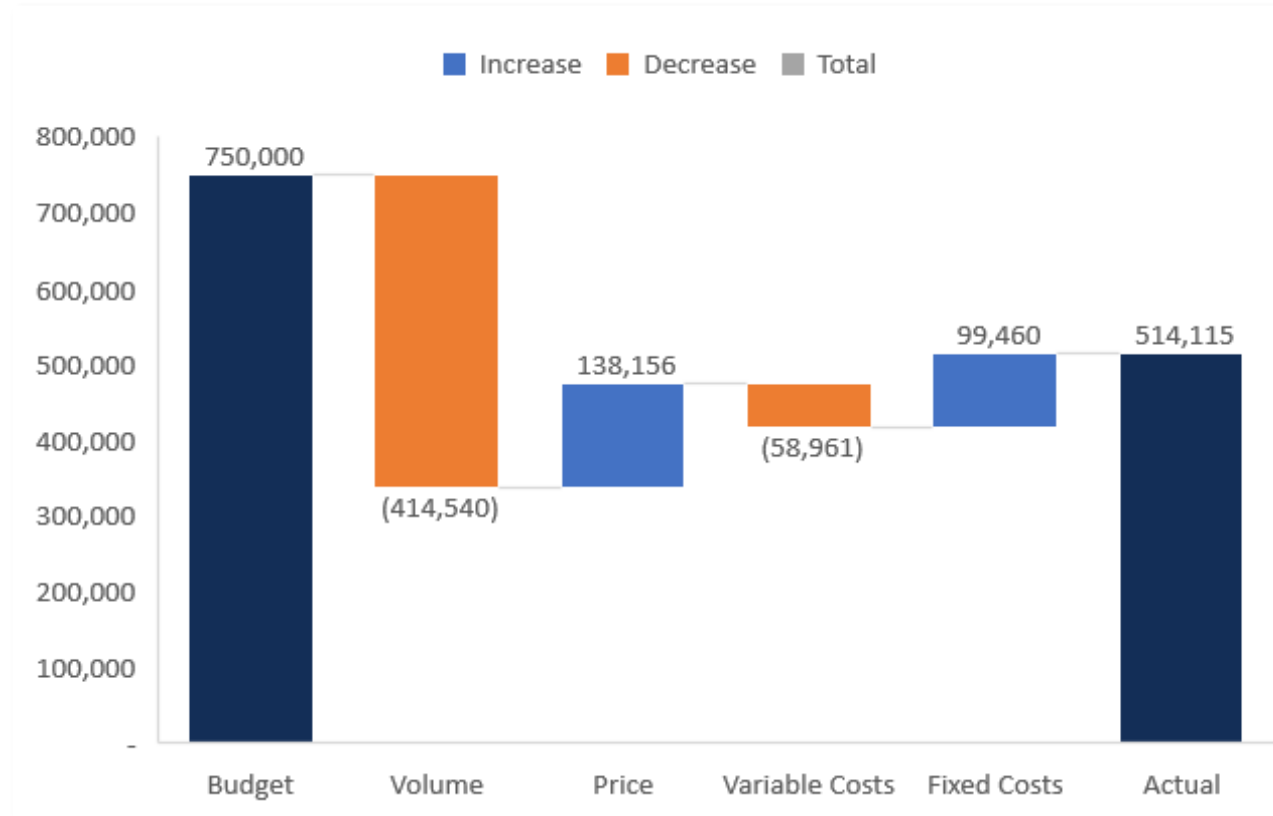
There are 4 common approaches to developing a budget:



4. Learn how to use various forecasting techniques

Technique	Use	Math involved	Data needed
Moving averages	Repeated forecasts	Minimum level	Historic data
Simple linear regression	Comparing one independent with one dependent variable	Statistical knowledge required	A sample of relevant observations
Multiple linear regression	Compare more than one independent variable with one dependent variable	Statistical knowledge required	A sample of relevant observations

5. Understanding how to track a budget's performance with variance analysis



6. Learn about practical applications of budgeting tools and techniques

Sum of Shipping Cost Column Label								
Row Labels	2018-01-01	2018-01-02	2018-01-03	2018-01-04	2018-01-05	2018-01-06	2018-01-07	Grand Total
Hat	-2	-2	-10	-2	-8	-2	-10	-36
Pants	-10	-10	-5	-5	-25	-20	-5	-80
Shorts	-6	-9	-6	-6	-21	-9	-6	-63
T-shirt	-15	-5	-10	-15	-15	-10	-10	-80
Grand Total	-33	-26	-31	-28	-69	-41	-31	-259

Row Labels	Sum of Revenue
Hat	450
Pants	1,200
Shorts	735
T-shirt	720
Grand Total	3,105